



RocketSim™

GPU-based Acceleration for Simulators

10x Faster Verilog Co-Simulations

Compatible with leading simulators:
cādence™ synopsys® Mentor
Graphics®

RocketSim™ solves functional verification bottlenecks by complementing simulators with a GPU-based acceleration solution that offers 10x faster simulations for highly complex designs.

Functional Verification Bottlenecks

Functional verification is a severe bottleneck in chip design projects. The ever-growing chip density and complexity impacts the time it takes simulators to complete each run. When each simulation takes days to complete, either the product's time-to-market is affected or at some cases teams tape-out early with less confidence.

Complementing Simulators with GPU-based Acceleration

RocketSim™ solves the simulator's bottleneck challenge by offloading most time-consuming calculations to an ultra-fast GPU-based engine. Unlike hardware based accelerators, RocketSim™ works from within the familiar simulator environment and runs alongside the existing test bench, eliminating ramp-up time while providing bit-precise results.

Supports Large Designs with Full Debug Visibility

RocketSim™ supports large and complex designs (Over 300 MegaGates), while offering full visibility of your design. You can finally expand your current verification scope to include larger designs and to verify more complex tests.

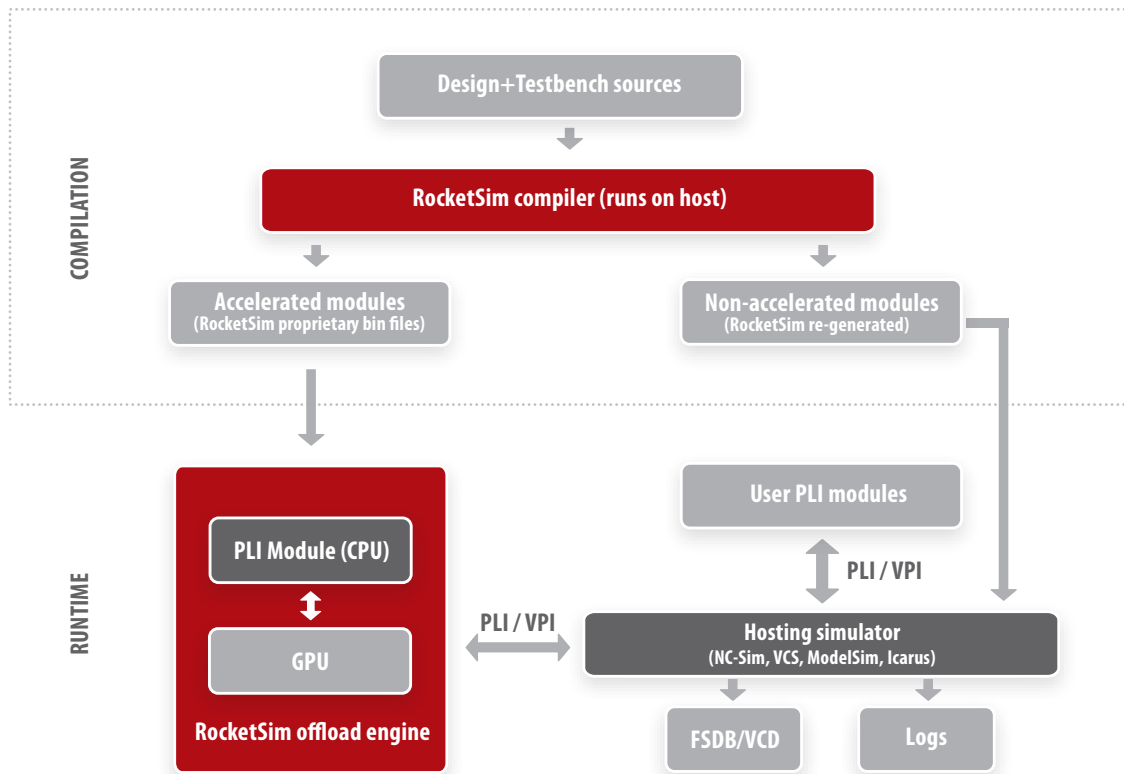
Runs from within the Simulator Environment

Working from within the the familiar host simulator environment, RocketSim supports any user PLI/VPI access to any design signals and RAMs, as part of its acceleration, and can run alongside the existing test bench.

Main Features

- *Software-based solution installed on standard GPU*
- *Accelerates leading simulators (VCS, NC-Sim and ModelSim) by 10x or more*
- *Rapid Compilation*
- *Full debug visibility*
- *300 Million logic gate capacity*
- *Compliant with Verilog IEEE 1364-2001, 1364-2005, VHDL, and System Verilog*
- *PLI/VPI compliant interface*
- *Runs alongside the test-bench*
- *Highly scalable*
- *No ramp-up*

RocketSim Flow

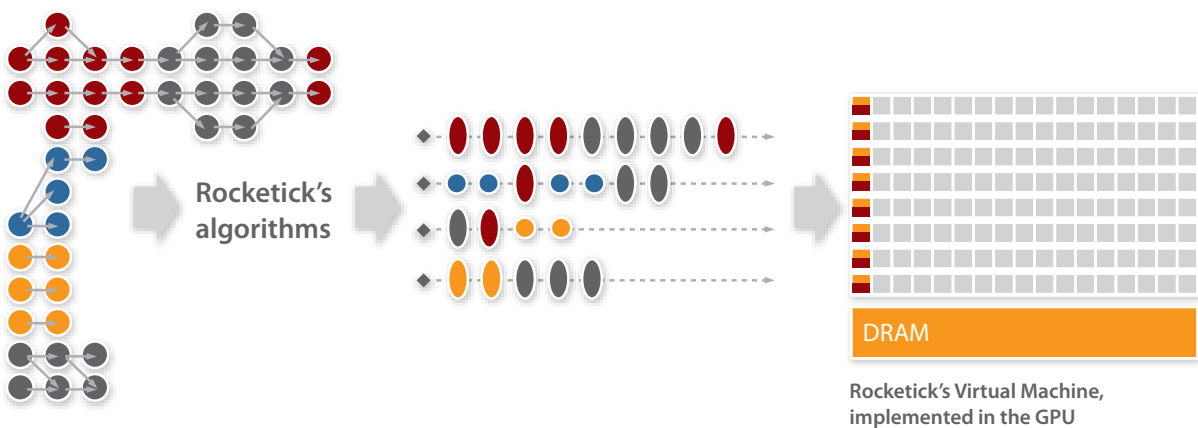


During compilation, RocketSim's compiler runs on the host machine, separating the design from the testbench. During runtime, the design is accelerated while the testbench runs on the

host simulator. The simulation runs normally, yet large portions of the logic are offloaded to the GPU and returned to the simulator via PLI.

Breaking the Dependency Barrier

Complex dependency graph



Logical simulators run highly complex calculations with extensive dependencies, limiting their ability to conduct parallel processing. RocketSim™ breaks this dependency barrier.

It analyses the dependencies and translates most of them into independent threads that can run in parallel on a GPU, which offers massive parallel computing.